

What is claimed is:

1. A method for making a silicic acid containing rubber base composition, the method comprising the steps of:

providing composition ingredients of rubber, silicic acid, silane and additional additives except for vulcanization

5 ingredients;

providing first and second mixers separate from each other wherein said ingredients except for said vulcanization ingredients can be mixed;

10 introducing all of said composition ingredients into said first mixer except for said vulcanization ingredients simultaneously or at time intervals;

mixing said composition ingredients introduced into said first mixer to a composition in said first mixer;

15 transferring the composition formed in said first mixer directly into said second mixer without an intermediate storage thereof; and,

20 mixing the transferred composition formed in said first mixer at least almost to completion in said second mixer with the temperature lying in the temperature range of 130° C to 180° C at least over the greatest part of the dwell time of the composition in said second mixer wherein said silicic acid reacts acceleratedly with said silane.

2. The method of claim 1, comprising the further step of heating said composition in said first mixer to a temperature lying in a temperature range of 110° C to 140° C.

3. The method of claim 1, comprising the further step of heating

said composition in said first mixer to a temperature lying in a temperature range of 130° C to 180° C.

4. The method of claim 1, wherein the dwell time of the composition in said first mixer corresponds to the dwell time of the composition in said second mixer.

5. The method of claim 4, wherein:

a first time duration is needed in order to uniformly distribute said composition ingredients;

a second time duration longer than said first time duration is needed in order to bring about at least almost a complete reaction of said silicic acid with said silane;

said dwell time in said first mixer and said dwell time in
said second mixer corresponds to half of the total time composed
of said first and second time durations; and,

the temperature of said composition in said first mixer is held in a temperature range of 130° C to 180° C over at least a time span which amounts to the difference between said second time duration and the dwell time of the composition in said second mixer.

6. The method of claim 1, wherein said first mixer is a ram mixer.

7. The method of claim 6, wherein the rotors of said first mixer interengage.

8. The method of claim 1, wherein said second mixer is a ramless mixer.

9. The method of claim 8, wherein the rotors of said second mixer interengage.

10. The method of claim 1, wherein said second mixer has a greater fill volume than said first mixer.

11. The method of claim 1, comprising the further step of providing a suction unit between said first and second mixers for drawing off reaction products which develop during the reaction of said silicic acid and said silane in said second mixer.

12. The method of claim 1, wherein the transfer of the composition from said first mixer to said second mixer takes place utilizing gravity force.

13. An arrangement for carrying out a method for making a silicic acid containing rubber base composition, the arrangement comprising:

a first mixer for receiving and mixing composition ingredients of rubber, silicic acid, silane and additional additives except for vulcanization ingredients;

a second mixer for receiving the composition formed in said first mixer;

said second mixer being a ramless mixer which is so configured and includes means for heating the rubber base composition transferred into said second mixer from said first mixer to a temperature in a temperature range of 130° C to 180° C and/or for maintaining the transferred rubber base composition within said temperature range of 130° C to 180° C.

14. The arrangement of claim 13, wherein said second mixer includes rotors; and, said second mixer heats the transferred rubber base composition with the rotation of the rotors thereof.